

Water Illustrated



How Does Your Water Measure Up?

Where does
College Station's
Water come from?

Top 10 Signs
You're Using Too Much Water

Xeriscaping
Save Water, Time and
Money on Your Lawn

**What Exactly is in
Your Drinking water?**

Water Facts of Life

Understanding
Water Quality Lingo

2006 Water Quality Report

waterwise

everything you've wanted to know about college station's water but were afraid to ask

Does College Station's water meet Federal and State standards?

Yes. In addition, College Station Water Services monitors your drinking water on a regular basis for more than 100 contaminants as required by the State of Texas.

How is our water treated?

Groundwater travels approximately 13 miles from the Sandy Point Pump Station to the Dowling Road Pump Station, where chlorine is added to disinfect the water. After the water is disinfected, it is ready to go into the distribution system.

Where does College Station's water come from?

College Station relies entirely on groundwater for its drinking water supply. In addition to two shallow wells in the Carrizo and Sparta formation, water is pumped from six deep wells drilled in the Simsboro Sand, which is approximately 3,000 feet deep in the Carrizo-Wilcox Aquifer group. Because of this depth, the

water temperature is 118 degrees Fahrenheit when pumped from underground. Cooling towers at the Sandy Point Pump Station reduce the temperature to about 85 degrees Fahrenheit.

I have a weakened immune system. What do I need to know about drinking water?

You may be more vulnerable than the general population to certain microbial contaminants, such as Cryptosporidium, in drinking water. Infants, some elderly, or immunocompromised persons such as those undergoing chemotherapy for cancer; those who have undergone organ transplants; those who are undergoing treatment with steroids; and people with HIV/AIDS or other immune system disorders can be particularly at risk from infections. You should seek advice about drinking water from your physician or health care provider. Additional guidelines on appropriate means to lessen the risk of infection by Cryptosporidium are available from the Safe Drinking Water Hotline at 800-426-4791.

Exactly what is in my drinking water?

Sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

If my drinking water has contaminants in it, does that mean it's not safe to drink?

All drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. In fact, when drinking water meets Federal standards, there may not be any health benefits to purchasing bottled water or using point-of-use devices. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline at 800-426-4791.

If water looks dirty or "rusty", is it safe to drink?

Occasionally, water may become discolored due to a water line break. Contaminants also may cause taste, color or odor problems, but these are not necessarily causes for health concerns. If you experience discolored water, report it to Utility Dispatch (24 hours) at 979-764-3638 in order for the problem to be corrected. For additional information on taste, odor or color of drinking water, contact College Station Water Services at 979-764-3660.

Year Sampled	Substance	Highest Detected Levels	Secondary Limit	Units
2002	Aluminum	0.008	50	ppm
2005	Bicarbonate	459	N/A	ppm
2002	Calcium	2.96	N/A	ppm
2005	Carbonate Alkalinity	0	N/A	ppm
2005	Chloride	54	250	ppm
2002	Copper	0.002	1	ppm
2005	Fluoride	1.1	2	ppm
2002	Hardness as Ca/Mg	8.14	N/A	ppm
2002	Magnesium	0.65	N/A	ppm
2002	Manganese	0.01	0.05	ppm
2005	pH	7.8	>7.0	N/A
2005	Phenolphthalein Alkalinity	0	N/A	ppm
2002	Silver	ND	0.1	ppm
2002	Sodium	200	N/A	ppm
2005	Specific Conductance	882	N/A	mmhos/cm
2005	Sulfate	9	300	ppm
2005	Total Alkalinity	376	N/A	ppm
2005	Total Dissolved Solids	523	1,000	ppm

What is the capacity of College Station's water system? Just how much water do we use in College Station?

System capacity is 23 million gallons per day. On average, 11 million gallons of water are used daily - the equivalent of 137 gallons per person. Peak days approach capacity with 20.4 million gallons used. Ground storage tanks at Dowling Road provide 8 million gallons of water storage for high demand periods. Two elevated towers, one on William D. Fitch Parkway and the other at Park Place, provide an additional 5 million gallons for peak demands and fire fighting.

How can you get involved in learning more about your water and wastewater utility?

Sign up for Citizens University (979-764-3499), attend a College Station City Council meeting, or bring the water utility to you by scheduling a plant tour or group presentation (Jennifer Douglass Nations, 979-764-6223). College Station City Council meets the second and fourth Thursday of each month at College Station City Hall, 1101 Texas Avenue. Meetings are broadcast live on Channel 19 and www.cstx.gov.

Water Illustrated

COLLEGE STATION UTILITIES
WATER SERVICES

David Coleman **Interim Director**
Jennifer Nations **Water Resources Coordinator**
Mark Beal **Photographer**

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Kathy Merrill **Assistant City Manager**

Cover Photo: Five-year old Gauge Faust enjoys the new Lincoln Center Splash Park in College Station.

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Top 10 Signs

You're Using Too Much Water:

The neighborhood kids hold toy boat races in front of your house every time your sprinklers come on.

Your dog has athlete's foot!

The Army Corps of Engineers considers your lawn to be a "jurisdictional wetland."

Your water bill is more than your monthly house payment or rent.

You have to put on rubber boots and wade through a bog to get the mail.

Your downstream neighbor uses your runoff for irrigation.

You keep hitting duck decoys with your lawnmower.

Your water account is a line item in the Water Utility's Budget.

The latest issue of Mosquito Monthly magazine lists your yard as one of the best places in the country to raise a family.

The kids across the street sell crawfish appetizers at their lemonade stand.

didyouknow?

There is the same amount of water on Earth today as there was when the Earth was formed. The water from your faucet could contain molecules that dinosaurs drank.



xeriscapi



Every summer it's sprinkler season in College Station as residents fight to keep their lawns green. So it comes as no surprise that during the hot summer the average College Station homeowner uses twice the amount of water as winter months: the average 6,200-gallons of water use in January doubles to more than 12,000 in July.

When it comes to water resources, that means residents are using a month's supply of household drinking water on their lawns for every month of summer heat.

But with a little landscape planning and an eye on the environment, local experts say you can reduce your water consumption, your water bill, and the amount of maintenance required for your landscape.

It can start as simply as posting a rain barrel to catch the runoff from your roof to use rainwater for your seasonal plants. And it can grow to water-wise landscaping that adds more room for people—decks, patios, and playgrounds—and for gardens full of beautiful plants and mulch.

Simple steps in landscaping known as “xeriscaping” or “smartscapeing” will save you time on lawn care and conserve a resource that in the summer heat might be better used for fighting fires or hydrating people than for keeping the grass green.

Take local expert and College Station resident Doug Welsh, Texas A&M Professor of Horticulture Science and Texas Cooperative Extension horticulturist. Welsh started with a goal: Each year, he'd convert 200 square feet of his bread-n-butter landscape to an environmentally friendly oasis.

What areas just didn't need to be solid lawn, he asked himself. Then each year, he'd add a new patio, a vegetable garden, or an area devoted to low maintenance shrubs and groundcover like Asiatic jasmine.

“You can still have beauty and interest—it doesn't have to be cactus and cattle skulls to be a water-smart landscape,” Welsh says. “And anyone can do it. You may not have wall-to-wall prize petunias, but you don't have to fight to maintain wall-to-wall green lawns, either.”

Water: A limited resource?

Why does it matter how much water we use—and potentially waste in runoff and evaporation—to water our lawns?

Though it's easy to think water is as abundant as the air we breathe, think again:

Doug Welsh

Texas A&M Professor
Horticulture Science and Texas Cooperative
Extension horticulturist

Photographed in the Texas A&M
Horticultural Gardens

For more information on landscape water conservation, watch this fall for the new book, *Doug Welsh's Texas Garden Almanac* (Texas A&M University Press, November 2007).

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The 7 Step Program

XERISCAPING IS THERAPY FOR YOUR YARD

xeriscaping (from the Greek *xeros* for “dry”) was first developed in Denver in 1981 as a way to decrease demand for water when more supply was not available. Since that is the situation many states are facing, including Texas, it makes sense for Texans to adopt the practices behind waterwise landscaping.

Xeriscaping is more of a philosophy than a set style, and the ideas are tuned to the environment you live in. So, if you dig cactuses and rocks, you can certainly make them part of your front yard. But for the College Station area, xeriscaping tends to look more like plain nice landscaping, with mulched flowerbeds and shrub and groundcover plantings that require little irrigation water and are happy to exist in the summer heat.

To join the xeriscape movement, follow these seven steps to give your yard some much-needed water smart therapy:

Start with a plan. Draw out your current landscaping, including all patio and playground areas, and decide what you’d like your waterwise landscape to include. Measure the areas, taking into account size and location of structures such as buildings, sidewalks, patios, etc. This will become the “base map” to develop the garden in stages as time and budget permits.

Analyze the soil. A soil test kit from a garden center will show you if chemicals in your yard are helping or hurting your plants as they absorb water. Texas A&M University’s Soil Testing Lab provides detailed soil analysis for a fee. It is a good idea to have the soil analyzed for nitrogen, phosphorus, potassium, calcium and magnesium content, as well as pH (acidity or alkalinity). Also part of this step is tilling and preparing the soil, at least 6 inches deep with material such as compost to aid water absorption.

Practical turf areas. A xeriscaped yard does not mean no lawn is allowed. Instead, it means you should think of your lawn as an element of the landscape design. Avoid long or narrow strips of turf that might be better off as bricked-in walkways, for example.

Select the right plants for College Station. Grass like St. Augustine, shrubs like rosemary, and perennials such as Mexican sage and lantana do best in central Texas weather conditions. Also, group plants according to how often they need to be watered. For a complete listing, see urbanlandscapguide.tamu.edu.

Use irrigation efficiently. Consider drip irrigation as the most water-efficient method, though you will want to consult an irrigation specialist. Once new plants are established, you can use less water.

Use plenty of mulch. Mulch minimizes evaporation, slows thirsty weed growth, and means less lawn to maintain. Organic mulch such as wood chips is best; stone-based mulches tend to retain and radiate heat.

Maintain your landscape. Regular pruning and “dead-heading” (removing spent flowers), in combination with aerating, mowing and fertilizing, will keep your plants and lawn in the best condition to use water wisely.

It’s a limited natural resource that, rather than used for keeping lawns green, can be better used to fight fires, flush toilets and keep us hydrated.

Such water usage tradeoffs are just what we and the generations ahead of us will have to face. As the population of Texas grows, demand for water is expected to soar 27 percent by 2060. According to the Texas Water Development Board’s 2007 State Water Plan, that will happen just as the water supply in the state’s aquifers is predicted to fall by as much as 18 percent of its current levels.

So what can you do about it, right here in College Station? Plant water-friendly plants native to central Texas or that naturally put up with our mild winters and hot, hot summers. Use mulch that prevents weeds and conserves water.

“It’s a simple concept,” Welsh says...and he should know. He’s written a book on landscape water management and spent the past 25 years educating Texans about it. “As responsible homeowners, we should be trying to build landscapes that are in tune with the environment and use as little drinking water as possible. A healthy environment starts in your own backyard.”

See the box to the right for more tips on how to save Mother Earth’s resources for the future, and save some time and money on your lawn... all at the same time.



For more details on how to achieve xeriscaping in your home, log onto urbanlandscapguide.tamu.edu or call College Station Water Resource Coordinator - Jennifer Douglass Nations at 979-764-6223.



what exactly is in your Drinking Water?

Independent laboratories certified by the EPA and State of Texas perform all required testing. All substances detected in routine testing are detailed below. All are below the Maximum Contaminant Level (MCL) and do not exceed the health-based standards for drinking water.

INORGANIC CONTAMINANTS

Year Sampled	Contaminant	Average Level	Minimum Level	Maximum Level	MCL	MCLG	Violation (Y or N)	Possible Sources of Contaminant
2002	Barium	0.086 ppm	0.086 ppm	0.086 ppm	2 ppm	2 ppm	N	Discharge of drilling wastes; erosion of natural deposits
2002	Chromium	1.4 ppb	0 ppm	2.9 ppb	100 ppb	100 ppb	N	Erosion of natural deposits
2006	Fluoride	0.20 ppm	0 ppm	0.47 ppm	4 ppm	2 ppm	N	Water additive to promote strong teeth; erosion of natural deposits
2006	Nitrate	0.05 ppm	0.05 ppm	0.05 ppm	10 ppm	10 ppm	N	Runoff from fertilizer use; leaching from septic tanks; erosion of natural deposits

DISINFECTANT RESIDUAL

Year Sampled	Disinfectant	Average Level	Minimum Level	Maximum Level	MRDL	MRDLG	Violation (Y or N)	Source of Disinfectant
2006	Chlorine	1.63 ppm	0.93 ppm	2.08 ppm	4 ppm	N/A	N	Water additive to control microbes

DISINFECTION BY-PRODUCTS

Year Sampled	Contaminant	Average Level	Minimum Level	Maximum Level	MCL	MCLG	Violation (Y or N)	Source of Contaminant
2006	Total Trihalomethanes	17.3 ppb	17.3ppb	17.3 ppb	80 ppb	N/A	N	Byproduct of drinking water disinfection
2006	Haloacetic Acids (HAA5)	1.7 ppb	1.7 ppb	1.7 ppb	60 ppb	N/A	N	Byproduct of drinking water disinfection

COLIFORMS

Year Sampled	Contaminant	Highest Monthly % of Positive Samples	MCL	MCLG	Violation (Y or N)	Possible Sources of Contaminant
2006	Total Coliform Bacteria*	1.06%	*	0	N	Naturally present in the environment

*Presence of Total Coliform Bacteria in $\geq 5\%$ of samples in one month

LEAD AND COPPER

Year Sampled	Contaminant	90th Percentile	Sites Exceeding Action Level	Action Level	Violation (Y or N)	Possible Sources of Contaminant
2004	Lead	1.8 ppb	0	15 ppb	N	Corrosion of household plumbing systems; erosion of natural deposits
2004	Copper	0.162 ppb	0	1.3 ppm	N	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives

UNREGULATED CONTAMINANTS

Year Sampled	Contaminant	Range Detected	Possible Sources of Contaminant
2002	Bromodichloromethane	1.3 ppb - 4.3 ppb	Byproduct of drinking water disinfection
2002	Bromoform	4.1 pp - 11.9 ppb	Byproduct of drinking water disinfection
2002	Chloroform	1 ppb	Byproduct of drinking water disinfection
2002	Dibromochloromethane	3.1 ppb - 12.1 ppb	Byproduct of drinking water disinfection



BE WATERWISE

A Source Water Susceptibility Assessment for your drinking water source is currently being updated by the TCEQ and will be provided to us this year. The report will describe the susceptibility and types of constituents that may come into contact with your drinking water source based on human activities and natural conditions. Information contained in the assessment will allow us to focus our source water protection strategies. For more information on source water assessments and protection efforts in College Station, please call us at 979-764-3660 or email jnations@cxstx.gov.

facts of LIFE

RIDE THE watercycle WITH THESE FUN FACTS

Water is composed of two elements,
Hydrogen and Oxygen.
 $2 \text{ Hydrogen} + 1 \text{ Oxygen} = \text{H}_2\text{O}$.

Nearly 97% of the world's water is salty
or otherwise undrinkable. Another 2% is
locked in ice caps and glaciers.
That leaves just 1% for all of
humanity's needs - all its agricultural,
residential, manufacturing,
community, and personal needs.

Water regulates the Earth's temper-
ature. It also regulates the tempera-
ture of the human body, carries
nutrients and oxygen to cells, cushions
joints, protects organs and tissues,
and removes wastes.

75% of the human brain is water and
75% of a living tree is water. A person
can live about a month without food, but
only about a week without water.

Water is part of a deeply
interconnected system. What we
pour on the ground ends up in our
water, and what we spew into
the sky ends up in our water.

The average cost for water
supplied to a home in the U.S. is about
\$2.00 for 1,000 gallons, which equals
about 5 gallons for a penny.

Reference: Environmental Protection Agency



WATER WORDS C R A M B L E G A M E

(Put the letters in the right order to complete the sentence)

All living things need _____ (tawer) to live.

When water evaporates, it travels into the air and becomes part of a _____. (dlocu)

Less than 1% of all the water on the earth is _____ (sefrh) water.

We _____ (ikrdn) water in the liquid form.

Check for leaks and save hundreds of _____ (allogns) of water a day.

You'll save water by taking a quick _____ (howser).

Wash bikes and cars with a _____ (kecbut) and sponge instead of a
running hose.

Ask your _____ (mfaiyl) to look for ways to save water.

Sources: Environmental Protection Agency, American Water Works Association

didyouknow?

Lead and Copper results (see table, page 6) are based on
30 samples in 2004. The 90th Percentile based on these
samples is 1.8 ppb for lead and 0.162 ppb for copper.
Ninety percent of College Station tap water samples were
at or below these levels. EPA considers the 90th per-
centile the same as an "average" value for other contam-
inants. If more than 10% of tap water samples collected
exceed the action level for lead or copper, water systems
must take additional treatment measures. The next round
of monitoring for lead and copper is summer / early fall
2007. Customer participation is important to ensure accu-
rate monitoring results. If your home is selected for
monitoring, collect the sample according to the instruc-
tions, and call 764-3660 to have your sample picked up.

W	E	L	L	S	D	M	P	Q	S	V	F
L	A	B	O	T	P	O	L	L	U	T	E
H	Z	T	R	E	A	T	M	E	N	T	R
C	P	A	E	R	I	C	B	C	U	E	T
O	Y	P	C	R	F	E	N	L	K	D	I
N	A	H	Y	J	S	T	M	E	H	I	L
T	E	A	C	P	Z	O	C	A	L	C	I
A	F	Z	L	K	T	R	U	N	T	I	Z
M	A	A	E	D	O	P	E	R	B	T	E
I	S	R	I	X	X	N	W	G	C	S	R
N	M	D	P	A	I	N	T	S	L	E	V
A	B	O	I	L	C	F	S	M	O	P	S
T	F	U	O	D	R	I	N	K	T	E	S
E	D	S	L	M	O	H	J	L	A	M	R
P	A	T	B	A	T	T	E	R	I	E	S
G	K	U	E	F	N	A	T	U	R	E	L



Can You Find These Words?

batteries
contaminate
hazardous
wells
leaks
pollute
safe
nature
drink
toxic
fertilizer
paint
gasoline
clean
treatment
tap
protect
water sources
recycle
pesticide
oil
(Circle each word)

College Station Utilities Quick Reference Guide

UTILITY SERVICE CENTER

Mapping, Field Operations, Administration
(979) 764-3660
1601 Graham Road
P.O. Box 9960
College Station, TX 77842

UTILITY CUSTOMER SERVICE

Bill payment, connect/disconnect utilities
(979) 764-3535 / 1-800-849-6623
<http://www.epay.cstx.gov/>
310 Krenek Tap Road
PO Box 10230
College Station, TX 77842-0230

AFTER HOURS / EMERGENCY

Line breaks, sewer backups, power outages
(979) 764-3638 (available 24 hours)

WATER CONSERVATION / PUBLIC EDUCATION

Presentations, field trips, water conservation tips
(979) 764-6223

ENVIRONMENTAL SERVICES

Water Quality, Backflow Prevention,
Grease/Grit Trap Inspections,
(979) 764-3660

ENERGY CONSERVATION

Audits, rebates, conservation tips
(979) 764-3724 / 764-6274

EN ESPAÑOL: Este reporte incluye información importante sobre el agua para tomar. Para asistencia en español, favor de llamar al telefono (979) 764-3433.



BEWATERWISE

UNDERSTANDING THE

alphabetsoup

OF WATER QUALITY ABBREVIATIONS

Action Level (AL): The concentration of a contaminant which, if exceeded, triggers treatment or other requirements a water system must follow.

Maximum Contaminant Level (MCL): The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the maximum contaminant level goals as feasible using the best available treatment technology.

Maximum Contaminant Level Goal (MCLG): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

Maximum Residual Disinfectant Level (MRDL): The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

Maximum Residual Disinfectant Level Goal (MRDLG): The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

Micromhos per centimeter: A measure of the electrical conductivity of a water sample. Pure water has a conductivity of 0.005 micromhos per centimeter at 25° Celsius.

Parts per billion (ppb): one microgram per liter.

Parts per million (ppm): one milligram per liter (mg/L). pH: The pH scale extends from 0, very acidic, to 14, very alkaline or basic. A pH of 7 is neutral. Most natural waters fall within the range of 4 to 9.

Secondary Maximum Contaminant Level (SMCL): The level of a contaminant that represents reasonable goals for drinking water quality. SMCLs pertain to contaminants that primarily affect the aesthetic qualities relating to drinking water.



Pictured left to right: Enjoying College Station water are D'Stinee Sephes-Vela, Gabrielle Eubanks, Alexa Eubanks, Grace Savage, Mia Williams, Hope Savage. All are children of College Station Water Services employees, along with Gauge Faust on the cover.



College Station Utilities

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